

FUJIMOTO et al.
Application No. 10/705,963
August 3, 2006

AMENDMENTS TO THE DRAWINGS

The attached sheets of drawings include changes to Figs. 1 and 6. These sheets, which include Figs. 1 and 6, replace the original sheets including these figures. In Fig. 1, clarification has been provided to signal generators 21-30 and heaters 31-34. In Fig. 6, labels “Yes” and “No” have been interchanged.

Attachment: Replacement Sheet(s)
Annotated Sheet Showing Changes

REMARKS/ARGUMENTS

Reconsideration and allowance of this application are respectfully requested.

Currently, claims 1-25 are pending in this application.

Substitute Specification:

A substitute specification is attached. A marked-up copy of the original specification showing changes made is also attached. Applicant hereby states that no new matter has been added by the substitute specification.

Objections and Rejections to the Specification:

Applicant respectfully submits that the substitute specification is in full conformance with 35 U.S.C. §112, first paragraph. For example, the substitute specification includes many of the Examiner's helpful suggestions.

With respect to sections 4 and 5 of the Office Action, the Office Action alleges that reference to "given" quantities such as vehicle speed and count are unclear and non-enabled. (See page 9, lines 2-5 of the original specification -- which was specifically identified in section 4 of the Office Action).

The standard for determining whether the specification meets the enablement requirement was cast in the Supreme Court decision of *Mineral Separation v. Hyde*, 242 U.S. 261, 270 (1916) which postured the question: is the experimentation needed to practice the invention undue or unreasonable? That standard is still the one to be applied. *In re Wands*, 858 F.2d 731, 737, 8 USPQ2d 1400, 1404 (Fed. Cir. 1988). Accordingly, even though the statute does not use the term "undue experimentation," it has been interpreted to require that the claimed invention be enabled so that any person skilled in the art can make and use the invention without undue experimentation. *In re Wands*, 858

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F.2d at 737, 8 USPQ2d at 1404 (Fed. Cir. 1988). See also *United States v. Teletronics, Inc.*, 857 F.2d 778, 785, 8 USPQ2d 1217, 1223 (Fed. Cir. 1988) (“The test of enablement is whether one reasonably skilled in the art could make or use the invention from the disclosures in the patent coupled with information known in the art without undue experimentation.”). A patent need not teach, and preferably omits, what is well known in the art. *In re Buchner*, 929 F.2d 660, 661, 18 USPQ2d 1331, 1332 (Fed. Cir. 1991); *Hybritech, Inc. v. Monoclonal Antibodies, Inc.*, 802 F.2d 1367, 1384, 231 USPQ 81, 94 (Fed. Cir. 1986), *cert. denied*, 480 U.S. 947 (1987); and *Lindemann Maschinenfabrik GMBH v. American Hoist & Derrick Co.*, 730 F.2d 1452, 1463, 221 USPQ 481, 489 (Fed. Cir. 1984).

The fact that experimentation may be complex does not necessarily make it undue, if the art typically engages in such experimentation. *In re Certain Limited-Charge Cell Culture Microcarriers*, 221 USPQ 1165, 1174 (Int’l Trade Comm’n 1983), *aff’d sub nom.*, *Massachusetts Institute of Technology v. A.B. Fortia*, 774 F.2d 1104, 227 USPQ 428 (Fed. Cir. 1985). See also *In re Wands*, 858 F.2d at 737, 8 USPQ2d at 1404.

Although a particular numeric speed is not specifically enumerated in the specification, defining a particular speed for the purposes of the claimed invention could be made by one skilled in the art from the specification’s disclosures and information known in the art without undue experimentation. The specification explicitly teaches that “a given speed can be a speed at which a vehicle does not stop.” This particular given speed can be determined by one skilled in the art without undue experimentation. Applicant thus respectfully submits that the objection to the disclosure be withdrawn. Similarly, other items identified in the specification including, for example, “feedback

control” (page 4, lines 7-9), “hardware structure” (page 6, lines 13-14), “trigger signal” (page 6, lines 9-10) and “opening degree” (page 12, lines 24-26) could be made by one skilled in the art from the originally-filed specification coupled with information known in the art without undue experimentation. As noted above, a patent need not teach, and preferably omits, what is well known in the art.

Section 4 of the Office Action further alleges that the door-handle manipulation switch 7 and the door opening/closing switch 8 described on page 9, lines 6-9 of the originally-filed specification are the same. Applicant respectfully disagrees. The originally-filed specification clearly describes that the door opening/closing switch 8 and the door-handle manipulation switch 7 have different purposes from each other. The door opening/closing switch 8 checks whether a door is open or closed, while the door-handle manipulation switch 7 checks whether a door-handle is manipulated or not.

With respect to section 5 of the Office Action, Applicant submits that one of ordinary skill in the art would have understood all of the terms identified in section 5. For example, one of ordinary skill in the art would have understood the terms “it”, “normal” and “abnormal” in page 9, lines 11-16 of the specification. In an abundance of caution, Applicant has amended this portion of the specification to make clear that “it” is referring to a diagnosis.

With respect to page 9, lines 26-27 of the original specification, one of ordinary skill in the art would understand that whether the ignition key is “drawn off” from an ignition insertion switch 5 relates to whether or not the ignition key is inserted.

With respect to page 13, line 15 (and claims 12-13) of the specification, the specification clearly describes in modification 2 how a mistaken detection of an anomaly

due to noise can be prevented. To resolve this noise influence, an anomaly which is detected as less than a given threshold value (e.g., time or counter) is essentially ignored or deleted as not indicating a final anomaly. An anomaly that is detected more than a given threshold value is treated as a final anomaly. Accordingly, the final anomaly differs from an anomaly that is ignored or deleted as being less than a given threshold value (time or counter). Accordingly, the specification also clearly describes a counter. The specific details of the counter can be obtained from the specification and information known in the art without undue experimentation.

With respect to page 16, lines 9-12 of the specification, the Office Action alleges that the sixth embodiment does not distinguish from previous embodiments. However, the originally-filed specification clearly describes how failure detection in Figs. 5-6 is not stopped until failure diagnosis is completed. (At steps S132, S133, S155 or S156 in Fig. 5 or 6). However, if the failure diagnosis cannot be completed within a given period, the failure diagnosis is compulsorily interrupted.

Again, Applicant respectfully submits that the specification (as amended) is in full conformance with 35 U.S.C. §112, first paragraph.

Objection to the Drawings:

Amendments to switches 21-30 in Fig. 1 and heaters 31-34 have been provided to Fig. 1. Applicant therefore respectfully requests that the objection to the drawings be withdrawn.

Claim Objection and Rejections Under 35 U.S.C. §112, Second Paragraph:

Applicant has amended the claims by incorporating many of the helpful suggestions provided by the Examiner. Applicant submits that claims 1-15 are in full

conformance with 35 U.S.C. §112, second paragraph. For example, the “means” described in claim 2 (“vehicle state detecting means”, “pre-start detecting means” and “anomaly detecting means”) are clearly distinct from each other as evident by the corresponding distinct functions. For example, claim 2 clearly states that the vehicle state detecting means is for detecting a vehicle state and the pre-start state detecting means is for detecting a detects the pre-start state. Clearly these means are thus distinct from each other as described by the explicitly identified (and different) functions. As described throughout the entire specification, the system will work as intended and thus the Office Action’s allegation to the contrary is erroneous. The invention of claim 5 clearly defines an anomaly. In particular, claim 5 clearly defines an anomaly based on two conditions being satisfied: (i) the ON-signal of the driver seat switch is not detected, and (ii) the driver retiring from the vehicle is detected. This clearly defines an anomaly. (For example, see page 9, lines 16-21 and Fig. 6). As described above, the recitation in claims 12-13 of incrementing a count while an anomaly of the pre-start state detecting means is detected and diagnosing the pre-start state detecting means with a final anomaly when the count exceeds a given count is clear. Through these claimed features, a noise influence (as an example of an anomaly detected which is less than a given threshold value as measured by time or a counter) is neglected or deleted. It is thus also clear that the counter serves as a mechanism for determining which anomalies may be neglected or deleted.

Accordingly, Applicant respectfully requests that the rejection under 35 U.S.C. §112, second paragraph, be withdrawn.

Claims 2-13:

Claims 2-13 were not rejected over prior art. In particular, claims 2-13 were not rejected under 35 U.S.C. §102 or §103. Since these claims are in full conformance with 35 U.S.C. §112 as discussed above, Applicant respectfully submits that these claims include allowable subject matter.

Rejections Under 35 U.S.C. §102 and §103:

Claim 1 was rejected under 35 U.S.C. §102 as allegedly being anticipated by Iwatani et al (U.S. '512, hereinafter "Iwatani"). Applicant respectfully traverses this rejection.

For a reference to anticipate a claim, each element must be found, either expressly or under principles of inherency, in the reference. Each element of claim 1 is not found in Iwatani. For example, Iwatani fails to disclose pre-start state detecting means for detecting a pre-start state by detecting a preparation operation for a start of the engine, wherein the warming-up means executes the warming-up prior to the start of the engine when the pre-start state detecting means detects the pre-start state; and anomaly detecting means for detecting an anomaly of the pre-start state detecting means.

Iwatani discloses a warm-up means (col. 9, lines 56-57). However, Iwatani discloses neither a pre-start state detecting means nor an anomaly detecting means as claimed. The Office Action alleges that the pre-start state detecting means is disclosed by col. 6, lines 45-67 of Iwatani. Col. 6, lines 45-67 states the following:

“Further, the ECU 30 executes an operation of the starter 26 and a start ignition of the engine 10 according to the operation of the ignition key 27a.

Further, a display device 28 turns on a light or displays letters or the like on the basis of a command signal from the ECU 30, and

gives a visual information to the driver of the engine system 100.

The ECU 30 is electrically connected to various kinds of sensors outputting signals for knowing the operation state of the engine 10 and various kinds of drive circuits for controlling the operation state of the engine 10 in addition to members such as the electric type ventilating fans 22a and 23a, the water temperature sensor 25a, the starter 26, the key cylinder 27, the ignition key 27a and the display device 28.

Further, the ECU 30 is provided with a central processing unit (CPU) 31, a read only memory (ROM) 32, a random access memory (RAM) 33, a backup RAM 34, a timer counter 35 and the like, in an inner portion thereof. A logical operation circuit is constituted by connecting the respective portions (31, 32, 33, 34, 35) to an external input circuit 36 and an external output circuit 37 by a bus 38. In this case, the ROM 32 previously stores various kinds of programs for controlling an operating state of the engine 10 such as a fuel....”

While this portion of Iwatani discloses an ECU, various sensors, and operation of the ECU, there is no description of detecting in a preparation operation for a start of the engine.

The Office Action alleges that the anomaly detecting means is disclosed in col. 4, lines 33-55 and col. 21, lines 2-8 of Iwatani. Col. 4, lines 33-55 of Iwatani states the following:

“The cooling system 20 is constituted by a circulating passage (a water jacket) A formed in such a manner as to surround an outer periphery of the respective combustion chambers and the intake and exhaust ports within the engine 10, a circulating passage B circulating cooling water between the engine 10 and a heat accumulating device 21, a circulating passage C circulating cooling water (a cooling medium) between the engine 10 and a radiator 22, and a circulating passage D circulating cooling water between the engine 10 and a heater core for heating 23. Further, a part of the circulating passage A is commonly used as a part of each of the circulating passages B, C and D. Further, the circulating passage A can be substantially separated into a circulating passage A1 formed within the cylinder block 10a, a passage A2 formed within the cylinder head 10b, and a bypass passage A3 connecting the circulating passage A1 to the passage A2.

That is, the cooling system 20 corresponds to a complex system constructed by combining a plurality of cooling water circulating passages, and the cooling water circulating within the cooling system 20 cools or warm up each of the portions in the engine 10 by serving as a heat transfer medium so as to perform a heat exchange with the engine 10.”

Col. 21, lines 2-8 of Iwatani states the following:

“...contrary, in the case that any abnormality is generated in the engine system 100 (particularly, in the cooling system 20) or the preheat execution is cancelled on the basis of the intentional operation of the driver, the start inhibition of the engine during the preheat is canceled, whereby it is possible to obtain an additional effect that a convenience is increased with respect to the operation of the engine system 100.”

The above-noted portions of Iwatani merely disclose a cooling system 20 an abnormality in the engine system. This portion fails to disclose an abnormality of a pre-start state detecting means.

Accordingly, Applicant respectfully requests that the rejection of claim 1 under 35 U.S.C. §102 be withdrawn.

Claim 14 was rejected under 35 U.S.C. §103 as allegedly being unpatentable over Iwatani in view of Ajima (U.S. ‘624). Since claim 14 depends from claim 1, all of the comments made above with respect to Iwatani apply equally to claim 14. Ajima fails to remedy the above described deficiencies of Iwatani. Applicant thus respectfully requests that the rejection of claim 14 under 35 U.S.C. §103 be withdrawn.

New Claims:

New claims 15-25 have been added to provide additional protection for the invention. Independent claim 15 requires, *inter alia*, a method comprising detecting an

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anomaly of the pre-start state detector. Accordingly, Applicant submits that these claims are allowable.

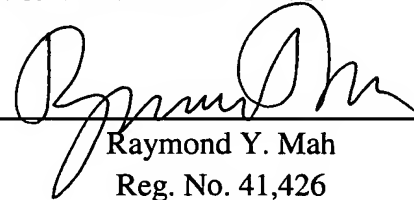
Conclusion:

Applicant believes that this entire application is in condition for allowance and respectfully requests a notice to this effect. If the Examiner has any questions or believes that an interview would further prosecution of this application, the Examiner is invited to telephone the undersigned.

Respectfully submitted,

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FIG. 1

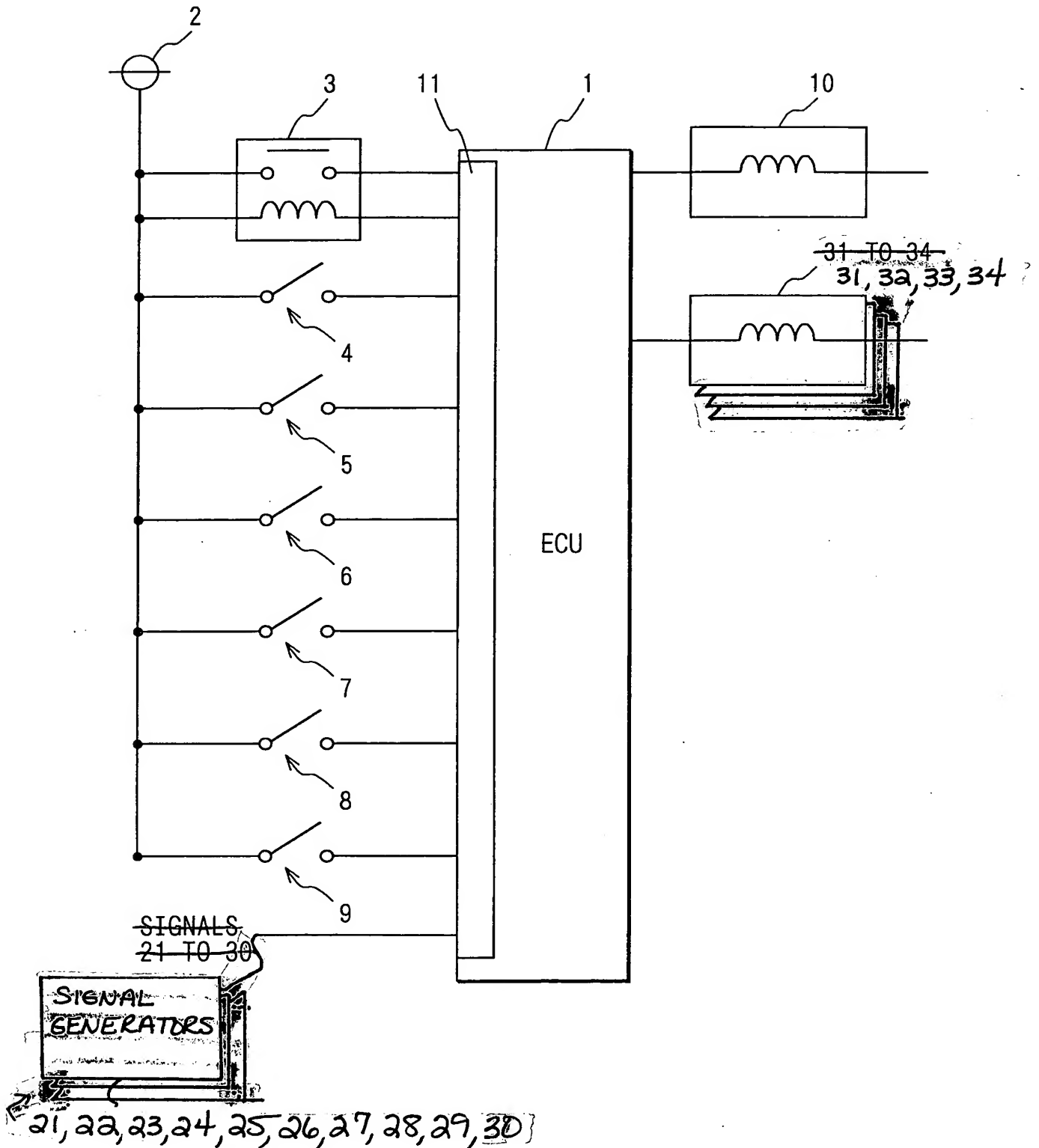


FIG. 6

